

ABSTRACT OF THE DISCLOSURE

A synthetic impedance telecommunication line driver has no electrical energy-dissipating elements in series with its output, and synthesizes its output impedance in accordance with current fed back from an output current
5 (mirror) sensing circuit. This allows the driver to realize substantially reduced power requirements for driving a telecommunication line, such as, but not limited to a DSX-1 line. The driver includes an operational amplifier having a first polarity input
10 coupled through an input resistor to an input port, to which a signal voltage to applied to an output port is coupled. A second polarity input of the amplifier is coupled to a reference voltage. A feedback resistor is coupled between the amplifier output and its inverting
15 input. An output current-dependent current source, such as a current mirror coupled in circuit with the output node, generates a current as a small fraction k of the output current. This mirrored fraction of the output current is fed back to an input of the amplifier, and
20 enables the output impedance Z_{out} of the driver to be defined in terms of the mirror current ratio k and the value of the driver amplifier's feedback resistor.